

## ABSTRACT

Provided is a method of producing an alumina film mainly in  $\alpha$  crystal structure superior in heat resistance, wherein the alumina film mainly in  $\alpha$  crystal structure is formed on a substrate, independently of the kind of the substrate at relatively low temperature, by treating the substrate surface with a ceramic powder mainly having the crystal structure same as that of alumina in the  $\alpha$  crystal structure, in forming the alumina film mainly in  $\alpha$  crystal structure on the substrate (including the substrate having a film previously formed thereon).